B. *Group of Yellow Hemiptera with Black Apex and one or two Black Bars* (Represented on Plate XIX).

At Malvern, Natal.

Pyrrhocoridæ.	*Reduviidæ.*
Dysdercus nigrofasciatus (fig. 49).	Phonoctonus nigrofasciatus (fig. 48).

At Salisbury, Mashonaland.

Pyrrhocoridæ.	*Reduviidæ.*
Dysdercus superstitiosus (fig. 50).	Phonoctonus formosus (fig. 52).
,, intermedius (fig. 51).	

The significance of the mimicry in this group has not yet been tested by experiment, and the exact relationship of the Reduviids to the common and undoubtedly distasteful *Dysdercí* is not quite clear. Dr. Dimock Brown, who observed *Phonoctonus* in company with myself at Malvern, suggested that its colouring may be pseudepisematic, and that it may feed upon the *Dysdercus* which it mimics so marvellously well. Personally I incline rather to the belief that both this species and the northern *P. formosus* are Batesian mimics. Both species occur but rarely (indeed, of the latter, I know only two specimens), they do not possess the strong smell which characterizes some of the Reduviids, and their jointed rostrum is a very inefficient weapon for protective purposes. I am not aware that they have been observed feeding on *Dysdercí* or even in company with them (cf. G. Breddin, Zeitsch. f. Naturw. 1896, pp. 36–38).

[Breddin considers the resemblance of the Reduviid to be a case of aggressive (pseudepisematic) mimicry, as he thinks with Dr. Dimock Brown it would prey on the *Dysdercus*. I believe that all such groups in the Hemiptera are synaposematic.—E. B. P.]

35. Miscellaneous Observations on South African Insects. (G. A. K. M.)

A. *Note on the Courtship of Limnas chrysippus.*

Salisbury, June 26, 1900.—In some old notes I find the following observation on the courtship of *chrysippus*. When first observed the female was settled on the

ground and was sharply fluttering her wings to keep off the male which was hovering above her. Whenever she rested for a moment with open wings the male would drop down on her, trying to settle on the costa of her fore-wing in such a position that the badge on his hind-wing came directly down on her head; and while hovering over her, his position was usually at right angles to hers, which renders it probable that the badge is some sort of scent-gland used for attractive purposes. The female however kept on fluttering pretty incessantly, and the male kept bumping down on her. Then another male came round and the first one went off and had a skirmish with him and drove him away. The female then took flight, the male usually keeping above her and trying to beat her down to the ground again. The female, on settling, renewed her defensive fluttering, and the male, apparently getting tired, flew off. The whole observation occupied five minutes. I never saw any use made by the male of his curious terminal tufts.

B. *The possible meaning of the Sac of Female Acræinæ.*

Malvern, May 14, 1897.—The species in which the sac is best developed are *Acræa neobule* and *A. horta*. With regard to the use of the organ, I remember making some observations at Salisbury in 1894 on *A. caldarena* and *A. nohara-halali* while ovipositing, and I then came to the conclusion that the sac was of no use during laying, being apparently rather an obstruction than otherwise. I therefore rather incline to your second suggestion, that it is probably to prevent copulation a second time. This view moreover seems to be borne out by what I have noticed in the courtship of the insects. So far as I have at present observed, Acræas appear to be the only butterflies which indulge in the system of "marriage by capture." In such of the *Nymphalinæ* as I have watched, the males have in no case attempted to seize the females, which, when anxious to escape their addresses, did so either by dodging among the vegetation or soaring. The females of some *Pierinæ* (notably *Belenois, Pinacopteryx*) have a very noticeable method of refusing the males; they settle with wings outspread but with fore-wings directed backwards so as almost to cover the hind-wings, and the abdomen is

raised in the air. This position is probably to prevent the male running along the side, for copulation is effected from the side. It might however be done in order to allow the male to see by her abdomen that she was gravid, for I have a case in my note-book (*P. pigea*) in which the male ran up and felt the abdomen with his palpi and then flew off. In the Acræas however I have observed several cases of copulation taking place in *A. petræa* and *A. horta*, and in all of them the male seized the female on the wing, grasping her with his intermediate legs about the thorax or base of the fore-wings, and they would fall struggling to the ground, where coition would take place. If this is the normal method of copulation, and unfortunately my observations have been too few to enable me to feel sure of it, then any organ which would protect the female from the attentions of an unlimited number of males would not only be useful but absolutely necessary.

Malvern, July 15, 1897.—The other day I saw a pair of *Acræa encedon* struggling together on the ground, the male clasping the female round the thorax from below. Unluckily a second or two after I noticed them they separated, so that I had not time to see whether it was really the sac which prevented coition. However I caught the female and found she had the sac fully developed and hard.

C. *A Rhodesian Muscid Fly Parasitic on Man.*

[Mr. E. E. Austen informs me that the fly sent by Mr. Marshall belongs to the *Muscidæ*, and is certainly a near ally of the genus *Bengalia*. A closely similar or possibly identical species with precisely similar habits occurs on the West Coast of Africa. Mr. Austen's observations upon this latter entirely confirm Mr. Marshall's conclusions as to the method by which the larva enters the skin. Mr. Austen proposes to publish a full description of the species—E. B. P.]

Salisbury, April 19, 1901.—I should be glad to know the name of the parasitic fly I send. It has been a great scourge this year in Salisbury, especially among young babies, the maggots forming a painful boil-like swelling under the skin. One baby had no less than sixty maggots extracted from it, and there have been several cases in which they have had a dozen or more.

Salisbury, Sept. 27, 1901.—The fly which lays eggs in man is very common here, but I have no specimens by me; I will catch you a series as soon as they appear again. The one I sent you was a male, the female is very much larger. I am much puzzled to understand how the larva obtains an entrance into the skin. It certainly cannot be through the stomach as in the case of some other bots. I fancy the egg or living larva must be laid on the clothing, and the latter being very minute might wander about and eventually enter the skin through a pore without being felt. The position of the bots in many cases renders it impossible for the egg to have been placed under the skin by the mother.

APPENDIX.

Description of a new species of Hyperechia, Schin. (Family Asilidæ), *from Mashonaland.* By Ernest E. Austen.

Hyperechia, Schiner:

Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien, xvi. Band, p. 673 (1866).

Hyperechia marshalli, sp. nov. (Pl. XXII, f. 20.)

♂. Length 28 millim.

Black, abdomen steely; cheeks, posterior margin of thorax in front of scutellum, outer side of front tibiæ, under side of thorax between bases of legs and in front of front coxæ, and outer side of middle femora, except apical fourth, clothed with orange-rufous hair: fringe on posterior margin of thorax very conspicuous, and more ferruginous† than orange-rufous.*

Front and *face* clothed with ochraceous hair; *mystax* ochraceous above and black below, with two or three black hairs in the middle

* Ridgway, "A Nomenclature of Colors" (Boston: Little, Brown and Coy., 1886), Pl. IV, 13.

† Ridgway, *op. cit.*, Pl. IV, 10.